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09/688,939	10/16/2000	William Davenport	07442-022001	9958
26161	7590	06/15/2005	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			ONUAKU, CHRISTOPHER O	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/688,939

Applicant(s)

DAVENPORT, WILLIAM

Examiner

Christopher Onuaku

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-21 and 32 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

NOTE

1. The indicated allowability of claims 1-9&11-21 is withdrawn in view of the newly discovered reference(s) to Lane (US 6,031,960), Sawada et al (US 6,219,381), Juri et al (US 5,585,931) and Lane et al 5,687,275. Rejections based on the newly cited reference(s) follow.

Response to Arguments

2. Applicant's arguments with respect to claims 1-9&11-21 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Lane et al (US 6,031,960).

Regarding claim 1, Lane et al disclose video recording and playback devices, including methods for insuring that a trick play data stream, e.g., a stream of data used for fast forward or reverse playback operation, complies with preselected data standards, the method comprising:

a) specifying a range of delivery intervals (see "a single set of data which is intended to be used for both fast forward and fast reverse playback modes of operation"; col.6, lines 31-54);

b) selecting a frame from the ordered sequence of frames, the selected frame including data representative of a selected image (see col.5, lines 28-32), here the selected frame is the I-frame;

c) generating a modified frame for trick-mode display of the selected frame, the modified frame including data representative of the selected image and being modified for delivery at a delivery interval within the range of delivery intervals (see col.5, lines 33-45).

Regarding claim 2, Lane et al disclose the method comprising including the modified frame in a sequence of modified frames to be displayed in trick play (see col.5,

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lines 33-45), here the selected I-frames are generated and modified, e.g., performing one or more reduction operations on the selected I-frames.

Regarding claim 3, Lane et al disclose the method wherein generating a modified frame comprises specifying a range of frame sizes on the basis of the specified range of delivery intervals, and processing the data representative of the selected image to create a modified frame having a modified-frame size within the range of selected frame sizes (see col.12, lines 6-55), here the specified size include data stream that satisfies MPEG-2 standard requirements.

Regarding claims 4&5, Lane et al disclose the method wherein processing the data representative of the selected image comprises padding the data to enable the modified-frame size to be within the specified range of frame sizes and wherein padding the data comprises adding null packets to the data (see col.12, lines 25-51).

Regarding claim 6, Lane et al disclose the method wherein processing the data representative of the selected image comprises degrading the data representative of the selected image such that the modified frame size is less than an upper bound of the range of frame sizes (see col.5, lines 33-45), here generating trick play data stream may include performing one or more reduction operations on the selected I-frames wherein the I-frames included in the trick play data stream may include reduced resolution I-frames generated by deleting high frequency discrete cosine transform

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(DCT) coefficients from blocks of video data included in the normal play bitstream to decrease the size of the blocks selected to be included in the trick play data stream.

Regarding claim 7, Lane et al disclose the method wherein degrading comprises discarding selected high frequency coefficients from the representative of the selected range (see col.5, lines 33-45).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8,9,11-17&32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lane et al. in view of Sawada et al (US 6,219,381)

Regarding claim 8, Lane et al fail to explicitly disclose the method wherein degrading comprises changing a quantizer scale associated with the data representative of the selected image. Sawada et al teach an image processing apparatus and method in which the moving picture data encoded by compressing moving pictures using the inter-frame prediction are sent out and reproduced at a fixed rate, including an image processing apparatus and method for realizing a trick play such as rapid feed and reverse rapid feed, comprising a quantization circuit 25 for quantizing DCT coefficients for the DC component and AC component independently, and a table

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29 used for extracting the determined quantization value. Here the quantization process includes the operation of eliminating (removing) the high-frequency terms, and determining the quantization value of the data to be quantized in order to efficiently compress the target data. It is well known that the determined quantization value varies depending on the target data compression requirements. It, therefore, would have been obvious to modify Lane et al by realizing Lane with quantization means, as taught by Sawada, which can vary the quantization scale in order to meet the compression requirements of the target data and to efficiently compress the target data.

Regarding claim 9, Sawada et al teach the method wherein degrading comprises selecting a first portion of the selected image, selecting a second portion of the selected image and degrading data representative of the first portion differently from data representative of the second portion (see col.11, lines 16-50), here the intraframe (I_picture) size is reduced by reducing the DCT coefficients, wherein DCT coefficient is divided into DC component and the AC component quantized independently, and wherein the high frequencies of the AC component are reduced. Here examiner reads the DC component as the claimed first portion and the AC component as the claimed second portion.

Regarding claim 11, Sawada et al teach the method comprising saving the sequence of modified frames in a trick-file (see Fig.5, moving picture file 41 for trick play, col.7, lines 3-35).

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Regarding claim 12, Sawada et al teach the method comprising transmitting the sequence of modified frames (trick play sequence) to a video client (see Fig.3, server 2; col.3, line 55 to col.4, line 17), here the trick play produced by the server 2 is transmitted to the client.

Regarding claim 13, Sawada et al teach the method comprising wherein saving the sequence comprises saving the trick-file in a mass-storage subsystem (see Fig.3, disk array 6; col.3, line 55 to col.4, line 17).

Regarding claim 14, Sawada et al teach the method comprising selecting the mass-storage subsystem from a group consisting of: a magnetic disk, an optical disk, and a magnetic tape (see Fig.3, and disk array 6 ; col.3, line 55 to col.4, line 17).

Regarding claim 15, Sawada et al teach the method comprising wherein the digital video file is an MPEG file and saving the sequence of modified frames in a trick-file comprises interleaving the modified frames with frames specifying zero motion (see Fig.21, image insertion means 303; col.11, lines 51-67 and col.12, lines 16-25), here P-pictures are inserted between I-pictures by the image insertion means 303.

Regarding claim 16, Sawada et al teach the method comprising selecting the digital video file to be an MPEG file (see col.1, lines 17-57).

Regarding claim 17, Sawada et al teach the method comprising selecting the ordered sequence of frames to be a sequence of intra-coded frames (see col.11, lines 1-15).

Regarding claim 32, the claimed limitations of claim 32 are accommodated in the discussions of claim 1. Sawada further teaches a computer system which processes moving picture file to produce file for trick play (see Abstract).

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lane et al. in view of Juri et al (US 5,585,931).

Regarding claim 18, Lane et al fail to explicitly disclose selecting the digital video file to include an image encoded by a wavelet transform. Juri et al teach a video signal recording apparatus and method used for recording and transmitting a video signal using bit rate reduction, wherein video signal converted to a digital signal is processed by the orthogonal transform processor 3 to form orthogonal transform blocks of plural adjacent pixels. A discrete cosine transform is normally applied as the orthogonal transform, but a wavelet transform or other method can also be applied (see col.3, lines 27-37).

It would have been obvious to modify Lane by realizing Lane with a wavelet transform means, as taught by Juri et al, since this provides the desirable advantage of applying wavelet transform, as an alternative orthogonal transform means.

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8. Claims 19&20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lane et al. in view of McLaren (US 6,058,240).

Regarding claims 19&20, Lane et al fail to explicitly disclose wherein the selected frame includes interlaced video data and the method further comprises removing the interlaced data, and wherein removing the interlaced video data from the frames comprises overwriting a second field of the frame with a first field of the second frame.

McLaren teaches digital video recording, including the derivation, recording and reproduction of MPEG like advanced television signals at non-standard speeds, wherein if HDTV video sequence originated from an interlaced scanning source, an optional processing step may be included to remove interlace flicker exhibited by frozen interlaced fields containing motion. If the temporal resolution of the reconstructed trick-play stream is such that the same frame (two fields) is displayed for more than one frame period, then such interlaced "flicker" may be very noticeable. In field-coded macroblocks this "flicker" artifact may be eliminated by copying the top two blocks of the macroblocks 0 and 1, to the lower two blocks 2 and 3 (Fig.5). This copying within the macroblock effectively makes both fields the same thus removing any field-field motion from the frame. This re-encoding process is performed as the macroblocks are written to the I-frame memory 110 (Fig.1) (see col.5, lines 9-23).

It would have been obvious to modify Lane by realizing Lane with the means to eliminate interlace flicker exhibited by frozen interlaced fields containing motion, as taught by McLaren, by copying the top two blocks of the top two blocks of the

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macroblocks to the lower two blocks , thereby effectively making both fields the same thus removing any field-field motion from the frame.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lane et al '960 in view of Lane et al (US 5,687,275).

Regarding claim 21, Lane '960 fails to explicitly disclose the method comprising indexing the modified frame to the selected frame thereby enabling transition between a normal mode, in which data representative of the image is obtained from the selected frame, and a trick-mode in which data representative of the image is obtained from the modified frame.

Lane '275 teaches digital video recording and playback devices including digital video tape recorders, including methods and apparatus for identifying trick play data, wherein when trick play is entered, the video disc playback head will move to the laser disk fast scan track region of the disc and position itself for reading over the fast scan frame data corresponding to the first fast scan frame subsequent to the normal frame . The fast scan tracks could be indexed and linked to specific frames in the normal data tracks. The head would then trace along the laser fast scan tracks recovering trick play data. When trick play operation is terminated, e.g., by a user command, and the device returns to normal scan, the last fast scan frame displayed will serve as the index to reposition the head back in the normal scan region of the disk. While the head motion to enter and exit the trick play region on the disc is not insignificant, it is only a fraction of a second in which video service is interrupted. This way recording trick data in a video

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disc fast scan tracks while simultaneously recording normal play data as it is being received may be achieved.

It would have obvious to modify Lane '960 with the frame indexing processing capability of Lane '275, since provides the desirable advantage of recording trick data in a video disc fast scan tracks while simultaneously recording normal play data as it is being received.

Allowable Subject Matter

10. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter.

Regarding claim 10, the invention relates to processing digital video, including the display of digital video files in fast forward and rewind mode.

The closest references, Lane et al (US 6,031,960) disclose video recording and playback devices, including methods for insuring that a trick play data stream, e.g., a stream of data used for fast forward or reverse playback operation, complies with preselected data standards, and Sawada et al (US 6,219,381) teach an image processing apparatus and method in which the moving picture data encoded by compressing moving pictures using the inter-frame prediction are sent out and

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reproduced at a fixed rate, including an image processing apparatus and method for realizing a trick play such as rapid feed and reverse rapid feed.

However, Lane et al and Sawada et al fail to explicitly disclose a method for processing digital video data for trick-mode display, wherein degrading comprises degrading data representative of a first portion of an image differently from data representative of a second portion of an image, where the method further comprises selecting the second portion to be a central portion of the selected frame and selecting the first portion to be a peripheral portion of the selected frame.

Conclusion

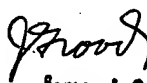
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Onuaku whose telephone number is 571-272-7379. The examiner can normally be reached on M-F.

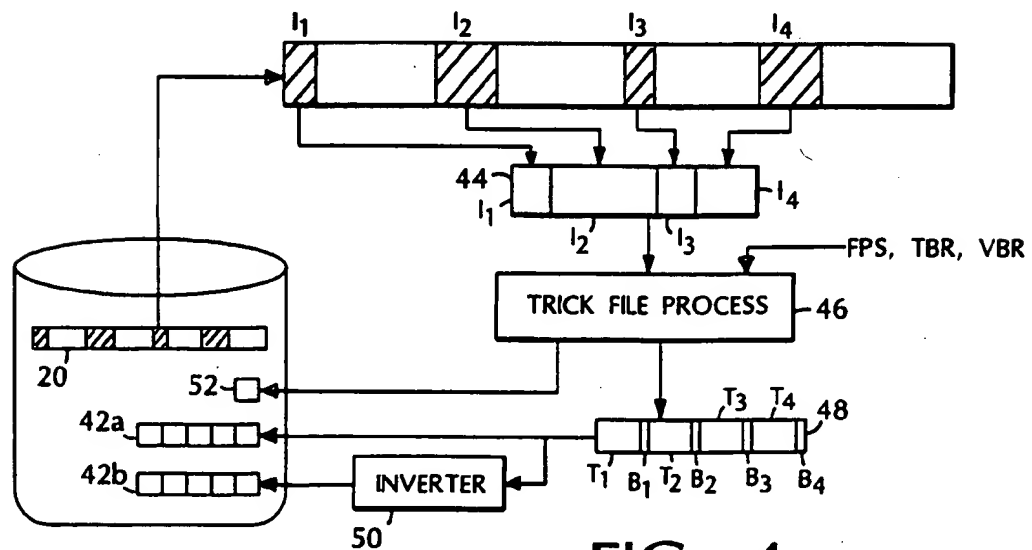
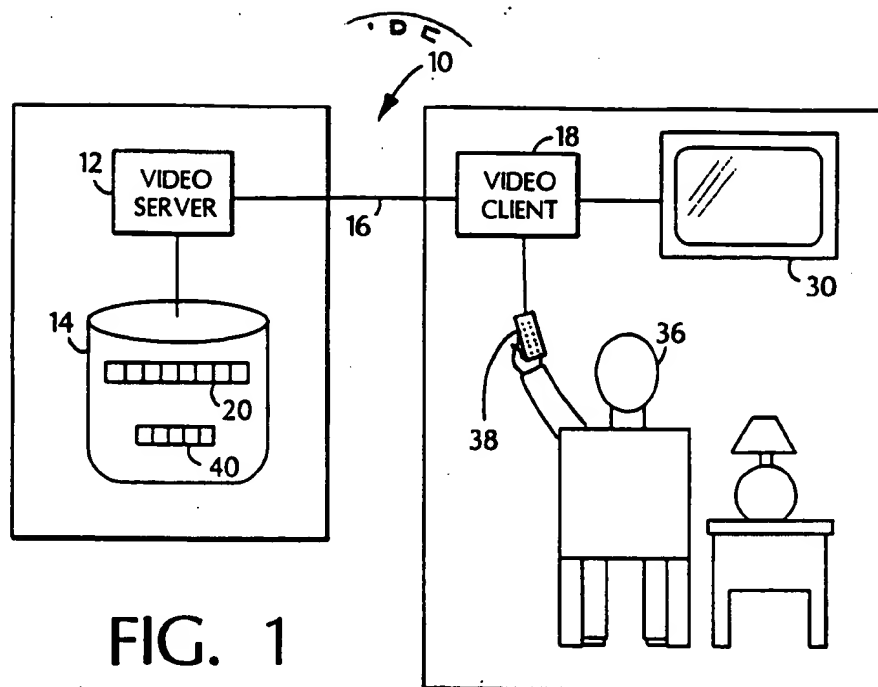
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Groody can be reached on 571-272-7950. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


COO
6/9/05


James J. Groody
Supervisory Patent Examiner
Art Unit 262-2616



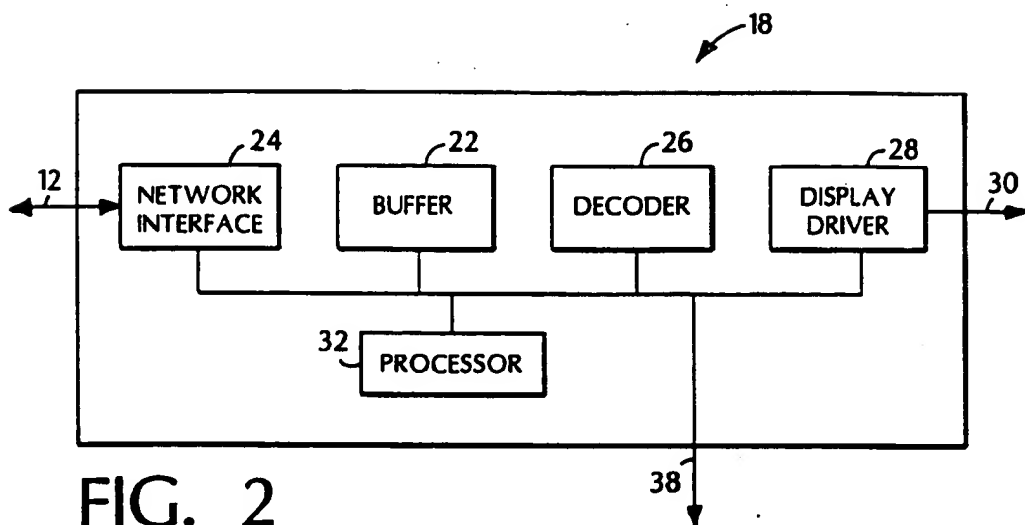


FIG. 2

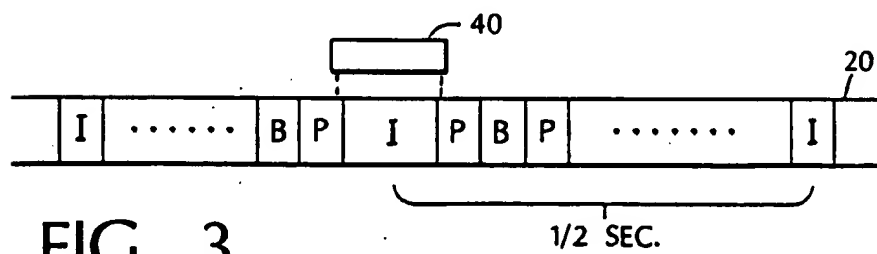


FIG. 3

